March 31, 2006

Peter Van Alyea
Redwood Oil Company
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Rohnert Park, CA 94928

Ground Water Monitoring Report
February, 2006
Former Redwood Oil Bulk Plant
105 X Street
Eureka, California
ECM Project #99-110-04

Dear Mr. Van Alyea:

This report provides the results of quarterly ground water monitoring at the Former Redwood Oil Bulk Plant at 105 X Street in Eureka, California (Figure 1, Appendix A). On February 14, 2006, ECM Group personnel visited the site. Ground water elevations were measured and ground water samples were collected from the six monitoring wells (MW-1 through MW-6) in accordance with the site monitoring program.[1] The well locations are shown on Figure 2 (Appendix A).

Ground water levels were measured in each of the six monitoring wells. Free-phase hydrocarbons were not observed in any of the wells. Wellheads and well vaults were observed to be in good condition. Water level data is shown in Table 1 (Appendix B) and a ground water elevation contour map is included as Figure 2 (Appendix A).

The samples were forwarded under chain of custody record to Entech Analytical Labs, of Santa Clara, California for analysis. Analytical results for ground water are included in Tables 2 and 3 (Appendix B). Ground water samples were collected in accordance with ECM Standard Operating Procedure - Ground Water Sampling (Appendix E). The chain of custody document and laboratory analytical reports are included as Appendix C. The water sampling data sheets are included as Appendix D. Purge water and decon rinseate were transported to an ROC holding tank for proper disposal.

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[1] Monitoring and Reporting Program No. R1-2004-0113 for Redwood Oil Company, 105 X Street, Eureka, CA, December 2, 2004.

Analytical results for this sampling event were generally consistent with results from prior sampling events. Analyses were performed in accordance with the site monitoring schedule. Samples form wells MW-1, MW-2, MW-3, and MW-5 were analyzed for TPH(G), BTEX compounds, and MTBE. The samples from wells MW-4 and MW-6 were analyzed for MTBE.

The concentrations of BTEX compounds and MTBE reported in the sample from well MW-1 were consistent with the concentrations reported in the sample from the November 2005 monitoring event. The detection limit for TPH(G) was increased due to the elevated concentration of MTBE. TPH(G) was not detected in the sample.

The sample from well MW-2 was analyzed for TPH(G), BTEX compounds, and MTBE. No analytes were detected in the sample

Low concentrations of BTEX compounds and MTBE were detected in the sample from well MW-3. A significant concentration of TPH(G) was also detected in the sample. All detections were consistent with previous concentrations detected in samples from well MW-3.

Well MW-4 is located upgradient from the impacted area of the site and is sampled on an annual basis in February. MTBE has previously been detected at low concentrations in samples from MW-4. The concentration of MTBE detected in the sample from the February 2006 monitoring event was low and consistent with concentrations detected in previous samples from MW-4.

A low concentration of TPH(G) and very low concentration of MTBE were detected in the sample from well MW-5. BTEX compounds were not detected in the sample. MTBE concentrations detected in each of the last four samples collected from MW-5 have been significantly lower than concentrations in samples collected previously from MW-5. MW-5 is located approximately 10 to 15 ft downgradient from the 2004 remedial excavation. Reduced MTBE concentrations may be a result of the remedial excavation.

Well MW-6 is located downgradient from well MW-5. The sample from well MW-6 was analyzed for MTBE. MTBE was detected at a concentration slightly lower than concentrations detected in previous samples.

Thank you for the opportunity to provide environmental services to Redwood Oil Company. Please call if you have any questions.

Sincerely,
ECM Group

David Hazard
Environmental Scientist

Chris Bramer
Professional Engineer #C048846

Appendices:
A - Figures
B - Tables
C - Chain of Custody and Laboratory Analytical Reports
D - Water Sampling Data Sheets
E - Standard Operating Procedure

cc: Kasey Ashley, North Coast Regional Water Quality Control Board
Mark Inglis, Chevron Products Co.

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APPENDIX A

FIGURES

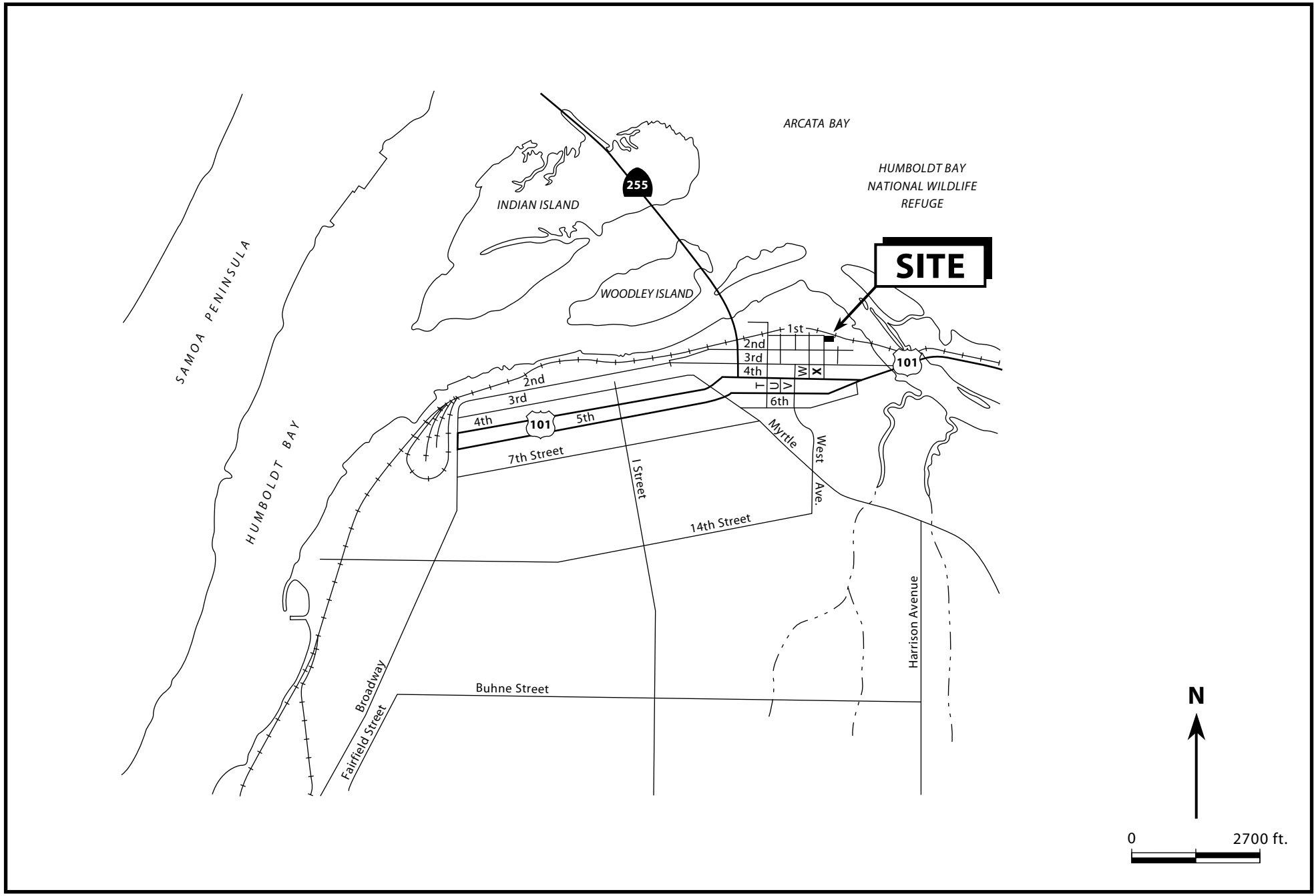

Figure 1. Site Location Map - Former Redwood Oil Bulk Plant, 105 X Street, Eureka, California

EXPLANATION

MW-6 Monitoring well

7.40 Ground water elevation, in feet above mean sea level

7.50 Ground water elevation contour, dashed where inferred

Approximate ground water flow direction with an approximate gradient of 0.01 ft/ft

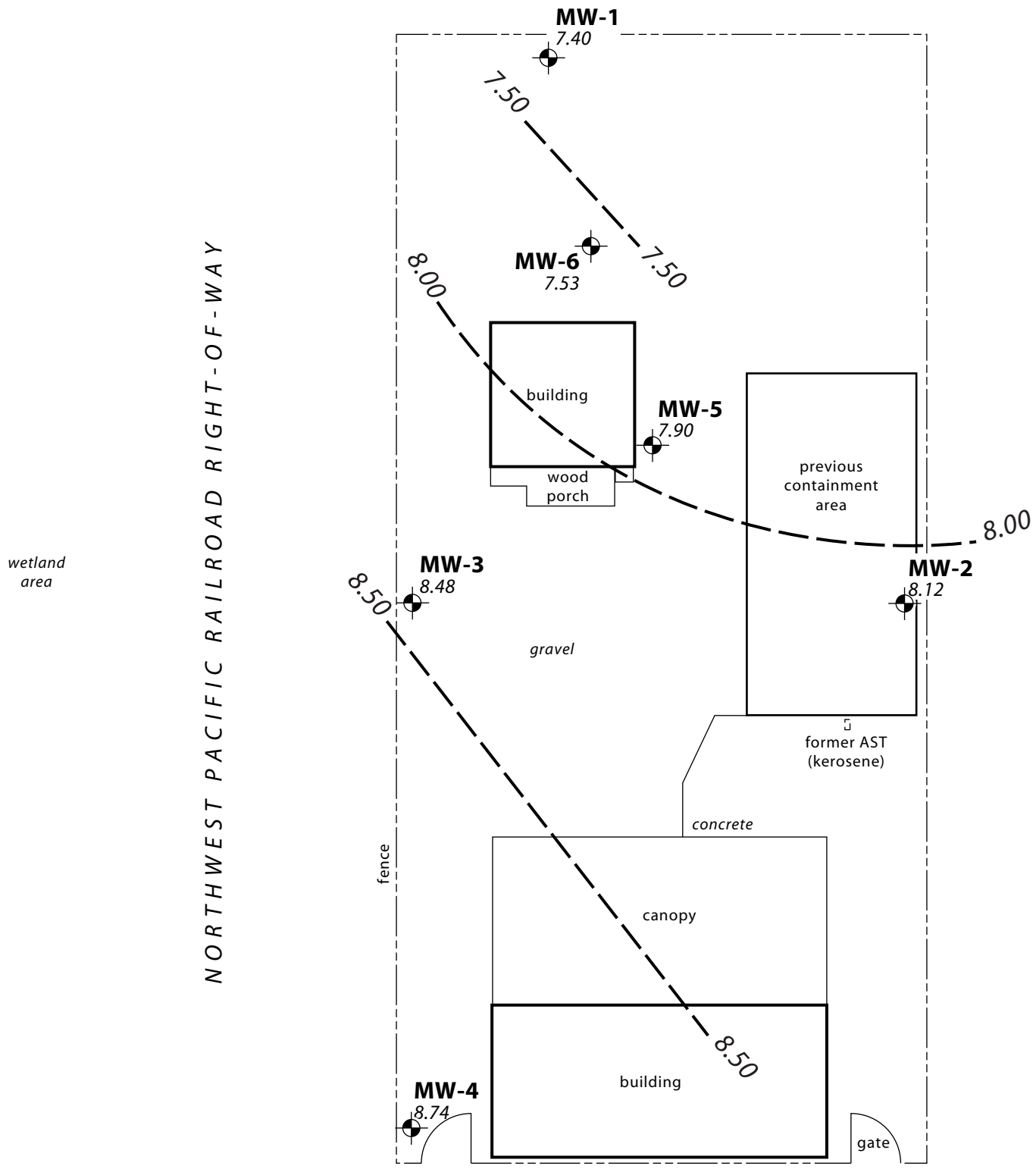

Figure 2. Monitoring Well Location and Groundwater Elevation Contour Map - February 14, 2006 - Former Redwood Oil Bulk Plant, 105 X Street, Eureka, California

99-110-04 [GW 2-06] 3/16/06

APPENDIX B

TABLES

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-1	5/14/2001	2.45	9.30	6.85	2 - 12	2 - 12	0 - 2	
	8/13/2001	2.92		6.38				
	11/9/2001	2.63		6.67				
	2/14/2002	1.84		7.46				
	5/1/2002	1.85		7.45				
	8/8/2002	2.91		6.39				
	11/15/2002	2.26		7.04				
	2/14/2003	1.78		7.52				
	5/23/2003	2.14		7.16				
	8/26/2003	2.85		6.45				
	11/17/2003	2.66		6.64				
	2/23/2004	1.38		7.92				
	5/13/2004	2.34		6.96				
	8/17/2004	2.76		6.54				
	11/23/2004	2.17		7.13				
	2/23/2005	1.68		7.62				
	8/17/2005	2.78		6.52				
	11/16/2005	1.46		7.84				
	2/14/2006	**1.90**		**7.40**				
MW-2	5/14/2001	3.28	10.96	7.68	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.63		7.33				
	11/9/2001	3.41		7.55				
	2/14/2002	2.90		8.06				
	5/1/2002	2.85		8.11				
	8/8/2002	3.71		7.25				
	11/15/2002	2.92		8.04				
	2/14/2003	2.88		8.08				
	5/23/2003	3.11		7.85				
	8/26/2003	3.65		7.31				
	11/17/2003	3.40		7.56				
	2/23/2004	2.45		8.51				
	5/13/2004	3.28		7.68				
	8/17/2004	3.49		7.47				
	11/23/2004	2.99		7.97				

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-2	2/23/2005	3.86	10.96	7.10	2 - 12	2 - 12	0 - 2	
	8/17/2005	3.55		7.41				
	11/16/2005	2.36		8.60				
	2/14/2006	**2.84**		**8.12**				
MW-3	5/14/2001	2.81	10.37	7.56	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.29		7.08				
	11/9/2001	2.98		7.39				
	2/14/2002	2.12		8.25				
	5/1/2002	1.99		8.38				
	8/8/2002	3.42		6.95				
	11/15/2002	2.44		7.93				
	2/14/2003	2.11		8.26				
	5/23/2003	2.38		7.99				
	8/26/2003	3.39		6.98				
	11/17/2003	2.60		7.77				
	2/23/2004	1.60		8.77				
	5/13/2004	2.72		7.65				
	8/17/2004	3.19		7.18				
	11/23/2004	2.29		8.08				
	2/23/2005	1.66		8.71				
	8/17/2005	2.96		7.41				
	11/16/2005	1.30		9.07				
	2/14/2006	**1.89**		**8.48**				
MW-4	5/14/2001	3.19	11.20	8.01	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.63		7.57				
	11/9/2001	3.39		7.81				
	2/14/2002	2.57		8.63				
	5/1/2002	2.42		8.78				
	8/8/2002	3.89		7.31				
	11/15/2002	3.12		8.08				
	2/14/2003	2.58		8.62				
	5/23/2003	2.88		8.32				
	8/26/2003	3.94		7.26				

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-4	11/17/2003	3.10	11.20	8.10	2 - 12	2 - 12	0 - 2	
	2/23/2004	2.19		9.01				
	5/13/2004	3.14		8.06				
	8/17/2004	2.04		9.16				
	11/23/2004	2.93		8.27				
	2/23/2005	2.39		8.81				
	8/17/2005	3.70		7.50				
	11/16/2005	2.05		9.15				
	2/14/2006	**2.46**		**8.74**				
MW-5	2/14/2003	2.39	10.26	7.87	2 - 12	2 - 12	0 - 2	
	5/23/2003	2.66		7.60				
	8/26/2003	3.36		6.90				
	11/17/2003	3.09		7.17				
	2/23/2004	1.90		8.36				
	5/13/2004	2.93		7.33				
	8/17/2004	3.25		7.01				
	11/23/2004	2.64		7.62				
	2/23/2005	2.19		8.07				
	8/17/2005	3.33		6.93				
	11/16/2005	1.94		8.32				
	2/14/2006	**2.36**		**7.90**				
MW-6	2/14/2003	2.03	9.69	7.66	2 - 12	2 - 12	0 - 2	
	5/23/2003	2.33		7.36				
	8/26/2003	3.03		6.66				
	11/17/2003	2.81		6.88				
	2/23/2004	1.56		8.13				
	5/13/2004	2.56		7.13				
	8/17/2004	2.96		6.73				
	11/23/2004	2.37		7.32				
	2/23/2005	2.17		7.52				
	8/17/2005	2.86		6.83				
	11/16/2005	1.75		7.94				
	2/14/2006	**2.16**		**7.53**				

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes

Explanation:

DTW = Depth to Water msl = Mean Sea Level
ft = feet
TOC = Top of Casing
GWE = Ground Water Elevation

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-1	5/14/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	<50	<0.5	<0.5	<0.5	0.51	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	130	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	230	---	---	---	---	Sample flagged by lab. See lab report for details.
	4/21/2005	---	---	130	<1	1.7	<1	2.0	
	8/17/2005	**---**	**---**	<50	<0.50	0.67	<0.50	1.0	
	11/16/2005	---	---	86	6.7	4.9	1.3	6.6	
	2/14/2006	**---**	**---**	**<100**	**3.0**	**1.7**	**<1.0**	**3.5**	
MW-2	5/14/2001	190	<170	660	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	140	<170	890	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	300	<0.5	<0.5	<0.5	0.5	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	180	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	190	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	290	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	140	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	0.5	
	8/17/2004	51	<170	240	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	<50	---	---	---	---	
	8/17/2005	**---**	**---**	83	<0.50	0.51	<0.50	0.99	
	2/14/2006	**---**	**---**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-3	5/14/2001	930	<170	2,900	28	45	140	69	
	8/13/2001	730	<170	3,600	31	49	140	99	
	11/9/2001	220	<170	2,700	26	39	120	78	
	2/14/2002	660	<170	3,400	20	59	120	82	
	5/1/2002	520	<170	3,600	15	52	150	107	
	8/8/2002	240	<170	1,200	13	17	53	29.7	
	11/15/2002	310	<170	1,900	13	20	64	44.9	
	2/14/2003	730	<170	5,400	31	88	210	112	
	8/26/2003	200	<170	2,000	17	21	67	38.3	
	2/23/2004	360	<170	3,100	21	39	110	62.9	
	8/17/2004	110	<170	1,500	14	11	42	25.9	
	2/23/2005	---	---	1,600	2.8	8.6	69	28	
	8/17/2005	**---**	**---**	350	<0.50	1.0	1.9	3.2	
	11/16/2005	---	---	800	4.1	6.0	17	20	
	2/14/2006	**---**	**---**	**1,000**	**1.2**	**3.9**	**24**	**15**	
MW-4	5/14/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	---	---	---	---	---	MW-4 analyzed for MTBE only, as of 12/2/04.

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-5	2/14/2003	89	<170	190	<0.50	<0.50	<0.50	<0.50	
	5/23/2003	110	<170	300	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	170	<0.50	<0.50	<0.50	<0.50	
	11/17/2003	51	<170	230	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	94	<170	260	<0.50	<0.50	<0.50	<0.50	
	5/13/2004	62	<170	170	<0.50	<0.50	<0.05	<0.50	
	8/17/2004	62	<170	190	<0.50	<0.50	<0.50	<0.50	
	11/23/2004	460	---	200	<0.5	<0.5	<0.5	<1	
	2/23/2005	---	---	320	---	---	---	---	Sample was flagged. See lab report for details.
	8/17/2005	**---**	**---**	120	<0.50	<0.50	<0.50	0.93	
	11/16/2005	---	---	65	2.8	3.1	1.2	5.3	
	2/14/2006	**---**	**---**	**110**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-6	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/23/2003	<50	<170	58	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/17/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/13/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/23/2004	<50	---	25	<0.5	<0.5	<0.5	<1	
	2/23/2005	---	---	---	---	---	---	---	MW-6 analyzed for MTBE only, as of 12/2/04.

Explanation:

TPH(D) = Total Petroleum Hydrocarbons as Diesel
TPH(MO) = Total Petroleum Hydrocarbons as Motor Oil
TPH(G) = Total Petroleum Hydrocarbons as Gasoline
ppb = parts per billion

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-1	5/14/2001	<10.0	3.9	<1.0	<1.0	<1.0	
	8/13/2001	<20	11	<1.0	<1.0	<1.0	
	11/9/2001	<20	14	<1.0	<1.0	<1.0	
	2/14/2002	<20	3.3	<1.0	<1.0	<1.0	
	5/1/2002	<20	3	<1.0	<1.0	<1.0	
	8/8/2002	<20	14	<1.0	<1.0	<1.0	
	11/15/2002	<20	3.8	<1.0	<1.0	<1.0	
	2/14/2003	<20	48	<1.0	<1.0	8.4	
	8/26/2003	<20	12	<1.0	<1.0	<1.0	
	2/23/2004	<10	76	<1.0	<1.0	42	
	8/17/2004	<10	8.1	<1.0	<1.0	<1.0	
	2/23/2005	---	220	---	---	---	
	4/21/2005	---	110	---	---	---	
	8/17/2005	---	8.1	---	---	---	
	11/16/2005	---	95	---	---	---	
	2/14/2006	---	**100**	---	---	---	
MW-2	5/14/2001	16	73	<1.0	<1.0	<1.0	
	8/13/2001	<20	130	<1.0	<1.0	1.2	
	11/9/2001	<20	98	<1.0	<1.0	<1.0	
	2/14/2002	<20	12	<1.0	<1.0	<1.0	
	5/1/2002	22	120	<1.0	<1.0	<1.0	
	8/8/2002	<20	53	<1.0	<1.0	<1.0	
	11/15/2002	<20	29	<1.0	<1.0	<1.0	
	2/14/2003	<20	36	<1.0	<1.0	<1.0	
	8/26/2003	<20	21	<1.0	<1.0	<1.0	
	2/23/2004	<10	<1.0	<1.0	<1.0	<1.0	
	8/17/2004	<10	9.2	<1.0	<1.0	<1.0	
	2/23/2005	---	16	---	---	---	
	8/17/2005	---	19	---	---	---	
	2/14/2006	**---**	**<1.0**	**---**	**---**	**---**	

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-3	5/14/2001	<50	8.1	<2.5	<2.5	<2.5	
	8/13/2001	<20	<20	<1.0	<1.0	<1.0	
	11/9/2001	<20	<20	<1.0	<1.0	<1.0	
	2/14/2002	<20	4.9	<1.0	<1.0	<1.0	
	5/1/2002	<20	4.4	<1.0	<1.0	<1.0	
	8/8/2002	<20	6.3	<10	<1.0	1.4	
	11/15/2002	<20	6.1	<1.0	<1.0	<3.0	
	2/14/2003	<20	<12	<1.0	<1.0	<1.0	
	8/26/2003	<20	<10	<1.0	<1.0	1.2	
	2/23/2004	<10	<6.0	<1.0	<1.0	<1.0	
	8/17/2004	<10	<8.0	<1.0	<1.0	<1.0	
	2/23/2005	---	6.0	---	---	---	
	8/17/2005	---	3.1	---	---	---	
	11/16/2005	---	7.9	---	---	---	
	2/14/2006	---	**7.8**	---	---	---	
MW-4	5/14/2001	<10.0	<0.50	<1.0	<1.0	<1.0	
	8/13/2001	<20	<1.0	<1.0	<1.0	<1.0	
	11/9/2001	<20	<1.0	<1.0	<1.0	<1.0	
	2/14/2002	<20	<1.0	<1.0	<1.0	<1.0	
	5/1/2002	<20	<1.0	<1.0	<1.0	<1.0	
	8/8/2002	<20	5.9	<1.0	<1.0	<1.0	
	11/15/2002	<20	4.7	<1.0	<1.0	<1.0	
	2/14/2003	<20	8.8	<1.0	<1.0	<1.0	
	8/26/2003	<20	6.9	<1.0	<1.0	<1.0	
	2/23/2004	<10	6.7	<1.0	<1.0	<1.0	
	8/17/2004	<10	4	<1.0	<1.0	<1.0	
	2/23/2005	---	3.1	---	---	---	
	2/14/2006	**---**	**2.3**	**---**	**---**	**---**	

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-5	2/14/2003	<20	32	<1.0	<1.0	<1.0	
	5/23/2003	<20	52	<1.0	<1.0	1	
	8/26/2003	<20	43	<1.0	<1.0	<1.0	
	11/17/2003	<20	57	<1.0	<1.0	1.6	
	2/23/2004	<10	20	<1.0	<1.0	<1.0	
	5/13/2004	<10	22	<1.0	<1.0	<1.0	
	8/17/2004	<10	55	<1.0	<1.0	2.6	
	11/23/2004	<10	33	<5	<5	<5	
	2/23/2005	---	8.8	---	---	---	
	8/17/2005	---	3.1	---	---	---	
	11/16/2005	---	2.2	---	---	---	
	2/14/2006	---	**3.9**	---	---	---	
MW-6	2/14/2003	<20	10	<1.0	<1.0	<1.0	
	5/23/2003	<20	41	<1.0	<1.0	1.7	
	8/26/2003	<20	25	<1.0	<1.0	<1.0	
	11/17/2003	<20	25	<1.0	<1.0	<1.0	
	2/23/2004	<10	5.3	<1.0	<1.0	<1.0	
	5/13/2004	<10	15	<1.0	<1.0	<1.0	
	8/17/2004	<10	25	<1.0	<1.0	<1.0	
	11/23/2004	<10	19	<5	<5	<5	
	2/23/2005	---	9.8	---	---	---	
	8/17/2005	---	11	---	---	---	
	11/16/2005	---	9.2	---	---	---	
	2/14/2006	---	**2.4**	---	---	---	

Explanation:

MTBE = Methyl Tertiary-butyl Ether

APPENDIX C

CHAIN OF CUSTODY
AND
LABORATORY ANALYTICAL REPORTS

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Dave Hazard
ECM Group
290 W. Channel Rd.
Benicia, CA 94510

Lab Certificate Number: 47924
Issued: 02/28/2006

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka

Global ID: T0602393494

Certificate of Analysis - Final Report

On February 17, 2006, samples were received under chain of custody for analysis.
Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test / Comments
Liquid	Electronic Deliverables
	EPA 8260B for Groundwater and Water - EPA 624 for Wastewater
	TPH as Gasoline by GC/MS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-001 **Sample ID: MW-1** **Matrix:** Liquid **Sample Date:** 2/14/2006 2:20 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	3.0		2.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226
Toluene	1.7		2.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226
Ethyl Benzene	ND		2.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226
Xylenes, Total	3.5		2.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226
Methyl-t-butyl Ether	100		2.0	2.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.4	60 - 130
Dibromofluoromethane	112	60 - 130
Toluene-d8	105	60 - 130

Analyzed by: XBian
Reviewed by: dba

EPA 5030C - TPH as Gasoline by GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		2.0	100	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	92.8	60 - 130
Dibromofluoromethane	101	60 - 130
Toluene-d8	99.7	60 - 130

Analyzed by: XBian
Reviewed by: dba

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-002 **Sample ID: MW-2** **Matrix:** Liquid **Sample Date:** 2/14/2006 3:25 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	99.3	60 - 130
Dibromofluoromethane	118	60 - 130
Toluene-d8	105	60 - 130

Analyzed by: XBian
Reviewed by: dba

EPA 5030C - TPH as Gasoline by GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.6	60 - 130
Dibromofluoromethane	106	60 - 130
Toluene-d8	100	60 - 130

Analyzed by: XBian
Reviewed by: dba

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-003 **Sample ID: MW-3** **Matrix:** Liquid **Sample Date:** 2/14/2006 3:00 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	1.2		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Toluene	3.9		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Ethyl Benzene	24		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Xylenes, Total	15		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Methyl-t-butyl Ether	7.8		1.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	114	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

EPA 5030C - TPH as Gasoline by GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	1000		5.0	250	µg/L	N/A	N/A	2/27/2006	WM1060227

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.5	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	98.0	60 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-004 **Sample ID: MW-4** **Matrix:** Liquid **Sample Date:** 2/14/2006 3:45 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	2.3		1.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101	60 - 130
Dibromofluoromethane	110	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: XBian
Reviewed by: dba

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-005 **Sample ID: MW-5** **Matrix:** Liquid **Sample Date:** 2/14/2006 3:15 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	2/26/2006	WM1060226
Methyl-t-butyl Ether	3.9		1.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	106	60 - 130
Dibromofluoromethane	111	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: XBian
Reviewed by: dba

EPA 5030C - TPH as Gasoline by GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	110		1.0	50	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	101	60 - 130
Toluene-d8	98.8	60 - 130

Analyzed by: XBian
Reviewed by: dba

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Project Number: 99-110-04
Project Name: 105 X ST.
Project Location: Eureka
GlobalID: T0602393494

Certificate of Analysis - Data Report

Samples Received: 02/17/2006
Sample Collected by: Client

Lab # : 47924-006 **Sample ID: MW-6** **Matrix:** Liquid **Sample Date:** 2/14/2006 2:45 PM

EPA 5030C - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	2.4		1.0	1.0	µg/L	N/A	N/A	2/26/2006	WM1060226

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	103	60 - 130
Dibromofluoromethane	111	60 - 130
Toluene-d8	104	60 - 130

Analyzed by: XBian
Reviewed by: dba

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM1060226

Validated by: dba - 02/27/06

QC Batch Analysis Date: 2/26/2006

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**91.3**	60 - 130
Dibromofluoromethane	**121**	60 - 130
Toluene-d8	**112**	60 - 130

Method Blank - Liquid - TPH as Gasoline by GC/MS

QC Batch ID: WM1060226

Validated by: dba - 02/27/06

QC Batch Analysis Date: 2/26/2006

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**86.1**	60 - 130
Dibromofluoromethane	**109**	60 - 130
Toluene-d8	**107**	60 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - TPH as Gasoline by GC/MS

QC Batch ID: WM1060227

Validated by: MaiChiTu - 02/28/06

QC Batch Analysis Date: 2/27/2006

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**93.9**	60 - 130
Dibromofluoromethane	**103**	60 - 130
Toluene-d8	**102**	60 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM1060226 Reviewed by: dba - 02/27/06

QC Batch ID Analysis Date: 2/26/2006

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	21.4	µg/L	107	70 - 130
Methyl-t-butyl Ether	<1.0	20	25.4	µg/L	127	70 - 130
Toluene	<0.50	20	20.3	µg/L	102	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.1**	60 - 130
Dibromofluoromethane	**109.0**	60 - 130
Toluene-d8	**97.5**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	22.4	µg/L	112	**4.6**	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	26.0	µg/L	130	**2.3**	25.0	70 - 130
Toluene	<0.50	20	20.7	µg/L	104	**2.0**	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**99.9**	60 - 130
Dibromofluoromethane	**112.0**	60 - 130
Toluene-d8	**95.6**	60 - 130

LCS / LCSD - Liquid - TPH as Gasoline by GC/MS

QC Batch ID: WM1060226 Reviewed by: dba - 02/27/06

QC Batch ID Analysis Date: 2/26/2006

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	104	µg/L	82.9	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.2**	60 - 130
Dibromofluoromethane	**101.0**	60 - 130
Toluene-d8	**98.5**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	102	µg/L	81.8	**1.3**	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**92.7**	60 - 130
Dibromofluoromethane	**101.0**	60 - 130
Toluene-d8	**99.5**	60 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - TPH as Gasoline by GC/MS

QC Batch ID: WM1060227

Reviewed by: MaiChiTu - 02/28/06

QC Batch ID Analysis Date: 2/27/2006

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	106	µg/L	85.1	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93.9**	60 - 130
Dibromofluoromethane	**100.0**	60 - 130
Toluene-d8	**97.3**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	111	µg/L	88.8	**4.2**	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**94.3**	60 - 130
Dibromofluoromethane	**100.0**	60 - 130
Toluene-d8	**97.2**	60 - 130

Entech Analytical Labs, Inc.

3334 Victor Court (408) 588-0200
Santa Clara, CA 95054 (408) 588-0201 - Fax

Chain of Custody / Analysis Request

Attention to: DAVE HAZARD	Phone No.: 707-751-0655	Purchase Order No.:	Invoice to: (If Different)	Phone:	
Company Name: ECM GROUP	Fax No.: 707-751-0653	Project No.: 99-110-04	Company: REDWOOD OIL CO.	Quote No.:	
Mailing Address: P.O. BOX 802	Email Address: ecmgrp@AOL.COM	Project Name: EUREKA	Billing Address: (If Different)		
City: BENICIA	State: CA	Zip Code: 94510	Project Location:	City:	State: / Zip:

Sampler: M. JACKSON | Field Org. Code:

Global ID:

Turn Around Time
- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☐ 4 Day ☐ 5 Day
- ☒ 10 Day

Order ID: 47924

Client ID / Field Point	Lab. No.	Sample Date	Sample Time	Matrix	No. of Containers	GC/MS Methods: EPA 8260B	BTEX ☒ MTBE ☒ TPH Gas ☒ by 8260B	5 Oxygenates (MTBE, TBA, ETBA, DIPE, TAME) ☐ Lead Scavengers (1,2-DCA & EDB) ☐ Ethanol ☐	Base/Neutral/Acid Organics 8270C ☐ PAH - 8270C SIM ☐ 8270C ☐ PAH - 8270C ☐	TPH Extractable: Diesel ☐ Motor Oil ☐ Other ☐ w/ Si-Gel Cleanup ☐	Pesticides-8081 ☐ PCBs - 8082 ☐	TPH as Gas/BTEX ☐ MTBE ☐ by 8015M/8020	Methanol by 8015M	GC Methods	General Chemistry: Anions: F ☐ Cl ☐ Br ☐ SO4 ☐ NO3 ☐ NO2 ☐ PO4 ☐	pH ☐ TSS ☐ SC ☐ TOC ☐ TRPH ☐ O & G ☐	Metals - Circle Below Total ☐ Dissolved ☐ STLC ☐ TCLP ☐	Remarks
MW-1	47924-001	2/14/06	14:20	W	4		X											
MW-2	002		15:25	W	4		X											
MW-3	003		15:00	W	4		X											
MW-4	004		15:45	W	4					X								
MW-5	005		15:15	W	4		X											
MW-6	006	↓	14:45	W	4					X								

MTBE by 8260B

Relinquished by:	Received by:	Date:	Time:
		2/17/06	0933
		2/17/06	1230

Special Instructions or Comments

Temp 6° (4) VOAs each Rcd intact DLT

Metals:
Al, As, Sb, Ba, Be, Bi, B, Cd, Ce, Ca, Cr, Co, Cs, Cu, Fe, Pb, Mg, Mn, Ga, Ge, Hg, In, Li, Mo, Ni, P, K, Si, Ag, Na, S, Se, Sr, Ta, Te, Tl, Sn, Ti, Zn, V, W, Zr

- ☐ EDD Report
- ☒ EDF Report
- ☐ Plating
- ☐ LUFT-5
- ☐ RCRA-8
- ☐ PPM-13
- ☐ CAM-17

APPENDIX D

WATER SAMPLING DATA SHEETS

WATER LEVEL &
PRODUCT MEASUREMENTS

ECM group

PROJECT NAME & NUMBER: EUREKA
99-110-04

DATE: 2/14/06
BY: MSJ

WELL ID	TIME MEASURED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH	COMMENTS: (well condition, odor, etc.)
MW-1			1.90	9.82	2"
MW-2			2.84	10.10	2"
MW-3			1.89	10.10	2"
MW-4			2.46	9.82	2"
MW-5			2.36	11.51	2"
MW-6			2.16	11.25	2"

8052-1147
8003-4987
707

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-1 Date 2/14/06 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 9.82

Depth to Water (static) 1.90 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 7.92 Volume 1.29 gallons

Total to be evacuated = 3 x Initial Volume 3.87 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_6" casing = 0.653 gal/ft
V_{8}" casing = 0.826 gal/ft
V_{10}" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	58.8	57.6	57.2				
pH	6.55	6.57	6.58				
EC (umhos/cm)	601	578	527				
Special Conditions							

SAMPLES COLLECTED

Sample ID	Bottle/ ml	cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

14:20

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-2 Date 2/14/05 Time _____

Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 10.10

Depth to Water (static) 2.84 TOC elev. _____

G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 7.26 Volume 1.18 gallons

Total to be evacuated = 3 x Initial Volume 3.55 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_5" casing = 0.653 gal/ft
V_{6}" casing = 0.826 gal/ft
V_8" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate _____

Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	56.5	56.1	55.4				
pH	6.24	6.23	6.29				
EC (umhos/cm)	96	98	121				
Special Conditions							

SAMPLES COLLECTED

Sample ID	Bottle/ ml	cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

15:25

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-3 Date 2/14/06 Time _____

Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 10.10

Depth to Water (static) 1.89 TOC elev. _____

G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 8.21 Volume 1.33 gallons

Total to be evacuated = 3 x Initial Volume 4.01 gallons

Stop Time | Start Time | Bailed | Pumped | Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate _____

Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	54.6	54.2	54.0				
pH	6.89	6.88	6.81				
EC (umhos/cm)	297	298	3.31				
Special Conditions							

SAMPLES COLLECTED

Sample ID	Bottle/ ml	cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

15:00

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-4 Date 2/14/06 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 9.82

Depth to Water (static) 2.46 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 7.36 Volume 1.19 gallons

Total to be evacuated = 3 x Initial Volume 3.59 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_6" casing = 0.653 gal/ft
$V_{8.25}$" casing = 0.826 gal/ft
V_8" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	53.2	53.7	53.9				
pH							
EC (umhos/cm)	277	274	275				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

15:45

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-5 Date 2/14/06 Time _____

Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 11.51

Depth to Water (static) 2.36 TOC elev. _____

G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 9.15 Volume 1.49 gallons

Total to be evacuated = 3 x Initial Volume 4.47 gallons

Formulae/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V₂" casing = 0.163 gal/ft
V₃" casing = 0.367 gal/ft
V₄" casing = 0.653 gal/ft
V₅" casing = 0.826 gal/ft
V₆" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate _____

Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	54.8	54.1	54.0				
pH	6.76	6.74	6.72				
EC (umhos/cm)	260	245	241				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

15:15

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-14

Well Number MW-6 Date 2/14/06 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 11.25

Depth to Water (static) 2.16 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 9.09 Volume 1.48 gallons

Total to be evacuated = 3 x Initial Volume 4.44 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_3" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_5" casing = 0.653 gal/ft
$V_{5.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	56.4	56.1	57.4				
pH	6.58	6.47	6.51				
EC (umhos/cm)	304	305	298				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

14:45

APPENDIX E

ECM STANDARD OPERATING PROCEDURE

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GROUND WATER SAMPLING

The following describes sampling procedures used by ECM field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is purged of a minimum of three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed 10%).

Ground water samples are collected from the wells/borings with steam-cleaned or disposable Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4˚C with blue ice or ice) for transport under chain-of-custody to the laboratory.

The chain-of-custody form includes the project number, analysis requested, sample ID, date analysis and the ECM field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.